Linux 8.0 (RHEL) Syllabus

Essential tools in linux part 1	2 Hours - 8 Topics

- Access a shell prompt and issue commands with correct syntax (Day 1)
- Use input-output redirection (>, >>, |, 2>, etc.) (Day 1)
- Use grep and regular expressions to analyze text (Day 1)
- Access remote systems using SSH (Day 1)
- Log in and switch users in multiuser targets (Day 1)
- Archive, compress, unpack, and uncompress files using tar, star, gzip, and bzip2 (Day 1)

Essential tools in linux part 2	2 Hours - 5 Topics

- Create and edit text files (Day 2)
- Create, delete, copy, and move files and directories (Day 2)
- Create hard and soft links (Day 2)
- List, set, and change standard ugo/rwx permissions (Day 2)
- Locate, read, and use system documentation including man, info, and files in /usr/share/doc (Day 2)

Understanding the Boot Process	2 Hours - 3 Topics

- Boot, reboot, and shut down a system normally (Day 3)
- Boot systems into different targets manually (Day 3)
- Interrupt the boot process in order to gain access to a system (Day 3)

Process Management	2 Hours - 3 Topics

- Identify CPU/memory intensive processes and kill processes (Day 4)
- Adjust process scheduling (Day 4)
- Manage tuning profiles (Day 4)

Log management and package management	2 Hours - 5 Topics

- Locate and interpret system log files and journals (Day 5)
- Preserve system journals (Day 5)
- Install and update software packages from Red Hat Network, a remote repository, or from the local file system (Day 5)
- Work with package module streams (Day 5)
- Modify the system bootloader (Day 5)

Service Management and task scheduling	2 Hours - 6 Topics

- Start, stop, and check the status of network services (Day 6)
- Securely transfer files between systems (Day 6)
- Start and stop services and configure services to start automatically at boot (Day 6)

- Configure systems to boot into a specific target automatically (Day 6)
- Configure time service clients (Day 6)
- Schedule tasks using at and cron (Day 6)

Storage Management Part 1	2 Hours - 3 Topics

- List, create, delete partitions on MBR and GPT disks (Day 7)
- Create and remove physical volumes (Day 7)
- Assign physical volumes to volume groups (Day 7)

Storage Management Part 2	2 Hours - 3 Topics

- Create and delete logical volumes (Day 8)
- Configure systems to mount file systems at boot by universally unique ID (UUID) or label (Day 8)
- Add new partitions and logical volumes, and swap to a system non-destructively (Day 8)

Network management	2 Hours - 4 Topics

- Configure IPv4 and IPv6 addresses (Day 9)
- Configure hostname resolution (Day 9)
- Configure network services to start automatically at boot (Day 9)
- Restrict network access using firewall-cmd/firewall (Day 9)

User and Groups Management	2 Hours - 4 Topics

- Create, delete, and modify local user accounts (Day 10)
- Change passwords and adjust password aging for local user accounts (Day 10)
- Create, delete, and modify local groups and group memberships (Day 10)
- Configure superuser access (Day 10)

Firewall Management, ACL and SSH	2 Hours - 3 Topics

- Configure firewall settings using firewall-cmd/firewalld (Day 11)
- Create and use file access control lists (Day 11)
- Configure key-based authentication for SSH (Day 11)

Security Enhancements through Selinux	2 Hours - 5 Topics

- Set enforcing and permissive modes for SELinux (Day 12)
- List and identify SELinux file and process context (Day 12)
- Restore default file contexts (Day 12)
- Use boolean settings to modify system SELinux settings (Day 12)
- Diagnose and address routine SELinux policy violations (Day 12)

Core components of Ansible	2 Hours - 8 Topics

- Inventories (Day 13)
- Modules (Day 13)
- Variables (Day 13)
- Facts (Day 13)

- Plays (Day 13)
- Playbooks (Day 13)
- Configuration files (Day 13)
- Use provided documentation to look up specific information about Ansible modules and commands (Day 13)

Installation and configuration of an Ansible control node 2 Hours - 5 Topics

- Install required packages (Day 14)
- Create a static host inventory file (Day 14)
- Create a configuration file (Day 14)
- Create and use static inventories to define groups of hosts (Day 14)
- Manage parallelism (Day 14)

Configuration of an Ansible managed nodes 2 Hours - 3 Topics

- Create and distribute SSH keys to managed nodes (Day 15)
- Configure privilege escalation on managed nodes (Day 15)
- Validate a working configuration using ad hoc Ansible commands (Day 15)

Introduction to Shell Scripts and administration tasks through Shell scripts 2 Hours - 2 Topics

- Create simple shell scripts (Day 16)
- Create simple shell scripts that run ad hoc Ansible commands (Day 16)

Creating Ansible plays and playbooks 2 Hours - 5 Topics

- Know how to work with commonly used Ansible modules (Day 17)
- Use variables to retrieve the results of running a command (Day 17)
- Use conditionals to control play execution (Day 17)
- Configure error handling (Day 17)
- Create playbooks to configure systems to a specified state (Day 17)

Uses of Ansible modules for system administration tasks that work with 2 Hours - 10 Topics

- Software packages and repositories (Day 18)
- Services (Day 18)
- Firewall rules (Day 18)
- File systems (Day 18)
- Storage devices (Day 18)
- File content (Day 18)
- Archiving (Day 18)
- Scheduled tasks (Day 18)
- Security (Day 18)
- Users and group (Day 18)

Ansible Roles	2 Hours - 2 Topics

- **Create roles (Day 19)**
- **Download roles from an Ansible Galaxy and use them (Day 19)**

Ansible Advanced features	2 Hours - 2 Topics

- **Create and use templates to create customized configuration files (Day 20)**
- **Use Ansible Vault in playbooks to protect sensitive data (Day 20)**